

group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasma, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex.

- (3) at least two of the bacteriophage are isolated against different strains of bacterial organisms; and
  - (4) each bacteriophage is effective in killing, *in vitro*, bacteria from at least about 50% of bacterial isolates, wherein the isolates are from the same strain of bacterial organism as that from which the bacteriophage is isolated; and
- (b) a pharmaceutically acceptable carrier.

24. The method of claim 23, wherein the bacterial organism is selected from the group consisting of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Helicobacter pylori*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus oralis*, *Streptococcus parasanguis*, *Streptococcus pyogenes*, *Streptococcus viridans*, Group A streptococcus and anaerobic streptococcus, *Hemophilus influenzae*, *Shigella dysenteriae*, *Mycobacterium tuberculosis*, *Mycobacterium leprae*, *Mycobacterium asiaticum*, *Mycobacterium intracellulare*, *Mycoplasma pneumoniae*, *Mycoplasma hominis*, *Neisseria meningitidis*, *Neisseria gonorrhea*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Propionibacterium acnes*, *Treponema pallidum*, *Treponema pertanue*, *Treponema carateum*, *Escherichia coli*, *Salmonella typhimurium*, *Borrelia burgdorferi*, *Leptospirex hemoragia*, and *Citrobacter freundii*.

25. The method of claim 24, wherein at least one of the bacterial organisms is *Staphylococcus aureus*.

26. The method of claim 24, wherein at least one of the bacterial organisms is *Streptococcus pyogenes*.

27. The method of claim 24, wherein at least one of the bacterial organisms is *Citrobacter freundii*. *freundii*

28. The method of claim 24, wherein at least one of the bacterial organisms is *Klebsiella oxytoca*.

29. The method of claim 24, wherein at least one of the bacterial organisms is *Escherichia coli*.

30. The method of claim 24, wherein at least one of the bacterial organisms is *Salmonella typhimurium*.

31. The method of claim 23, wherein the carrier is in the form of a liposome.

32. The method of claim 23, wherein the carrier is a dendrimer.

Sub D2  
33. The method of claim 24, wherein the preparation is resistant to one or more properties selected from the group consisting of:

- (a) resistant to exposure to high temperatures;
- (b) resistant to exposure to drying;
- (c) resistant to exposure to lytic agents;
- (d) resistant to exposure to mutator hosts;
- (e) resistant to heat shock; and
- (f) resistant to resistant to ionic variation.

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34. The method of claim 24, wherein the preparation is capable of surviving for a period of time greater than 24 hours following isolation under normal or abnormal conditions.

35. The method of claim 23, further comprising administering an antibiotic.

36. The method of claim 35, wherein the antibiotic is selected from the group consisting of aminoglycosides, cephalosporins, macrolides, erythromycin, monobactams, penicillins, quinolones, sulphonamides, and tetracycline.

C/A3  
37. A method of treating a mammal suffering from infection by a bacterial organism, comprising administering to the mammal an effective amount of a bacteriophage composition for a period of time sufficient to substantially kill the bacterial organism, wherein the bacteriophage composition comprises:

(a) a purified, host-specific, non-toxic, wide host range, and virulent bacteriophage preparation, wherein:

- (1) the preparation consists essentially of two or more bacteriophage, and

- (2) each bacteriophage is selected against one of the group consisting of staphylococci, hemophilii, helicobacter, mycobacterium, mycoplasmi, streptococci, neisserii, klebsiella, enterobacter, proteus, bacteriodes, pseudomonas, borrelii, citrobacter, escherichia, salmonella, propionibacterium, treponema, shigella, enterococci, and leptospirex; and
- (b) a pharmaceutically acceptable carrier.

38. The method of claim 37, wherein the bacterial organism is selected from the group consisting of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Helicobacter pylori*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus oralis*, *Streptococcus parasanguis*, *Streptococcus pyogenes*, *Streptococcus viridans*, Group A streptococcus and anaerobic streptococcus, *Hemophilus influenzae*, *Shigella dysenteriae*, *Mycobacterium tuberculosis*, *Mycobacterium leprae*, *Mycobacterium asiaticum*, *Mycobacterium intracellulare*, *Mycoplasma pneumoniae*, *Mycoplasma hominis*, *Neisseria meningitidis*, *Neisseria gonorrhea*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Propionibacterium acnes*, *Treponema pallidum*, *Treponema pertanue*, *Treponema carateum*, *Escherichia coli*, *Salmonella typhimurium*, *Borrelia burgdorferi*, *Leptospirex hemoragia*, and *Citrobacter fruendii*.

39. The method of claim 38, wherein at least one of the bacterial organisms is *Staphylococcus aureus*.

40. The method of claim 38, wherein at least one of the bacterial organisms is *Streptococcus pyogenes*.

41. The method of claim 38, wherein at least one of the bacterial organisms is *Citrobacter fruendii*.

42. The method of claim 38, wherein at least one of the bacterial organisms is *Klebsiella oxytoca*.

43. The method of claim 38, wherein at least one of the bacterial organisms is *Escherichia coli*.

44. The method of claim 38, wherein at least one of the bacterial organisms is *Salmonella typhimurium*.

45. The method of claim 37, wherein the carrier is in the form of a liposome.

46. The method of claim 37, wherein the carrier is a dendrimer.

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D3  
47. The method of claim 38, wherein the preparation is resistant to one or more properties selected from the group consisting of:

- (a) resistant to exposure to high temperatures;
- (b) resistant to exposure to drying;
- (c) resistant to exposure to lytic agents;
- (d) resistant to exposure to mutator hosts;
- (e) resistant to heat shock; and
- (f) resistant to ~~resistant~~ to ionic variation.

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48. The method of claim 38, wherein the preparation is capable of surviving for a period of time greater than 24 hours following isolation under normal or abnormal conditions.

49. The method of claim 37, further comprising administering an antibiotic.

50. The method of claim 49, wherein the antibiotic is selected from the group consisting of aminoglycosides, cephalosporins, macrolides, erythromycin, monobactams, penicillins, quinolones, sulphonamides, and tetracycline.

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